

SEQUENCE LISTING

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<120> POLYNUCLEOTIDE ENCODING AN ACTIVATED HUMAN
T-LYMPHOCYTE-DERIVED PROTEIN RELATED TO UBIQUITIN
CONJUGATING ENZYME

<130> D0034np

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<150> 60/308,706

<151> 2001-07-30

<150> 60/244,688

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<170> PatentIn Ver. 2.1

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gaccgcggcg gcggcgggcg cggcgggcgc ggcgagccc ggagcgcagg ccggaggctc 480
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gcg gcg ccg ggg gcc ggg ggc ggc cca ggg ggg ggc ccg ggg ccg ggg	630
Ala Ala Pro Gly Ala Gly Gly Gly Pro Gly Gly Gly Pro Gly Pro Gly	
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ccc tgc ctg agg cga gag ctg aag ctg ctc gag tcc atc ttc cac cgc	678
Pro Cys Leu Arg Arg Glu Leu Lys Leu Leu Glu Ser Ile Phe His Arg	
40 45 50	
ggc cac gag cgc ttc cgc att gcc agc gcc tgc ctg gac gag ctg agc	726
Gly His Glu Arg Phe Arg Ile Ala Ser Ala Cys Leu Asp Glu Leu Ser	
55 60 65 70	
tgc gag ttc ctg ctg gct ggg gcc gga ggg gcc ggg gcg ggg gcc gcg	774
Cys Glu Phe Leu Leu Ala Gly Ala Gly Ala Gly Ala Gly Ala Ala	
75 80 85	
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Pro Gly Pro His Leu Pro Pro Arg Gly Ser Val Pro Gly Asp Pro Val	
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cgc atc cac tgc aac atc acg gag tca tac cct gct gtg ccc ccc atc	870
Arg Ile His Cys Asn Ile Thr Glu Ser Tyr Pro Ala Val Pro Pro Ile	
105 110 115	
tgg tcg gtg gag tct gat gac cct aac ttg gct gct gtc ttg gag agg	918
Trp Ser Val Glu Ser Asp Asp Pro Asn Leu Ala Val Leu Glu Arg	
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ctg gtg gac ata aag aaa ggg aat act ctg cta ttg cag cat ctg aag	966
Leu Val Asp Ile Lys Lys Gly Asn Thr Leu Leu Leu Gln His Leu Lys	
135 140 145 150	
agg atc atc tcc gac ctg tgt aaa ctc tat aac ctc cct cag cat cca	1014
Arg Ile Ile Ser Asp Leu Cys Lys Leu Tyr Asn Leu Pro Gln His Pro	
155 160 165	
gat gtg gag atg ctg gat caa ccc ttg cca gca gag cag tgc aca cag	1062
Asp Val Glu Met Leu Asp Gln Pro Leu Pro Ala Glu Gln Cys Thr Gln	
170 175 180	
gaa gac gtg tct tca gaa gat gaa gat gag gag atg cct gag gac aca	1110
Glu Asp Val Ser Ser Glu Asp Glu Asp Glu Glu Met Pro Glu Asp Thr	
185 190 195	
gaa gac tta gat cac tat gaa atg aaa gag gaa gag cca gct gag ggc	1158
Glu Asp Leu Asp His Tyr Glu Met Lys Glu Glu Glu Pro Ala Glu Gly	
200 205 210	
aag aaa tct gaa gat gat ggc att gga aaa gaa aac ttg gcc atc cta	1206
Lys Lys Ser Glu Asp Asp Gly Ile Gly Lys Glu Asn Leu Ala Ile Leu	
215 220 225 230	

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gag aaa att aaa aag aac cag agg caa gat tac tta aat ggt gca gtg 1254
 Glu Lys Ile Lys Lys Asn Gln Arg Gln Asp Tyr Leu Asn Gly Ala Val
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tct ggc tcg gtg cag gcc act gac cgg ctg atg aag gag ctc agg gat 1302
 Ser Gly Ser Val Gln Ala Thr Asp Arg Leu Met Lys Glu Leu Arg Asp
 250 255 260

ata tac cga tca cag agt ttc aaa ggc gga aac tat gca gtc gaa ctc 1350
 Ile Tyr Arg Ser Gln Ser Phe Lys Gly Gly Asn Tyr Ala Val Glu Leu
 265 270 275

gtg aat gac agt ctg tat gat tgg aat gtc aaa ctc ctc aaa gtt gac 1398
 Val Asn Asp Ser Leu Tyr Asp Trp Asn Val Lys Leu Leu Lys Val Asp
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cag gac agc gct ttg cac aac gat ctc cag atc ctc aaa gag aaa gaa 1446
 Gln Asp Ser Ala Leu His Asn Asp Leu Gln Ile Leu Lys Glu Lys Glu
 295 300 305 310

gga gcc gac ttc att cta ctt aac ttt tcc ttt aaa gat aac ttt ccc 1494
 Gly Ala Asp Phe Ile Leu Leu Asn Phe Ser Phe Lys Asp Asn Phe Pro
 315 320 325

ttt gac cca cca ttt gtc agg gtt gtg tct cca gtc ctc tct gga ggg 1542
 Phe Asp Pro Pro Phe Val Arg Val Val Ser Pro Val Leu Ser Gly Gly
 330 335 340

tat gtt ctg ggc gga ggg gcc atc tgc atg gaa ctt ctc acc aaa cag 1590
 Tyr Val Leu Gly Gly Gly Ala Ile Cys Met Glu Leu Leu Thr Lys Gln
 345 350 355

ggc tgg agc agt gcc tac tcc ata gag tca gtg atc atg cag atc agt 1638
 Gly Trp Ser Ser Ala Tyr Ser Ile Glu Ser Val Ile Met Gln Ile Ser
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gcc aca ctg gtg aag ggg aaa gca cga gtg cag ttt gga gcc aac aaa 1686
 Ala Thr Leu Val Lys Gly Lys Ala Arg Val Gln Phe Gly Ala Asn Lys
 375 380 385 390

tct caa tac agt ctg aca aga gca cag cag tcc tac aag tcc ttg gtg 1734
 Ser Gln Tyr Ser Leu Thr Arg Ala Gln Gln Ser Tyr Lys Ser Leu Val
 395 400 405

cag atc cac gaa aaa aac ggc tgg tac aca ccc cca aaa gaa gac ggc 1782
 Gln Ile His Glu Lys Asn Gly Trp Tyr Thr Pro Pro Lys Glu Asp Gly
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taaccctgga gtatcaccct tcctccctcc ccaggcacca ctggaccaat tacctttgaa 1842

tgctgtatatt ggatctcag ctgcctctgt ggtccctcc ctcatttttc ctggacgtga 1902

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acagaactgt ttcaagtact caagactgac ttacagacca accaaccacc ttgctggaac 2022

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 <212> PRT
 <213> Homo sapiens

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 Gly Gly Pro Gly Pro Gly Pro Cys Leu Arg Arg Glu Leu Lys Leu Leu
 35 40 45
 Glu Ser Ile Phe His Arg Gly His Glu Arg Phe Arg Ile Ala Ser Ala
 50 55 60
 Cys Leu Asp Glu Leu Ser Cys Glu Phe Leu Leu Ala Gly Ala Gly Gly
 65 70 75 80
 Ala Gly Ala Gly Ala Ala Pro Gly Pro His Leu Pro Pro Arg Gly Ser
 85 90 95
 Val Pro Gly Asp Pro Val Arg Ile His Cys Asn Ile Thr Glu Ser Tyr
 100 105 110
 Pro Ala Val Pro Pro Ile Trp Ser Val Glu Ser Asp Asp Pro Asn Leu
 115 120 125
 Ala Ala Val Leu Glu Arg Leu Val Asp Ile Lys Lys Gly Asn Thr Leu
 130 135 140
 Leu Leu Gln His Leu Lys Arg Ile Ile Ser Asp Leu Cys Lys Leu Tyr
 145 150 155 160
 Asn Leu Pro Gln His Pro Asp Val Glu Met Leu Asp Gln Pro Leu Pro
 165 170 175
 Ala Glu Gln Cys Thr Gln Glu Asp Val Ser Ser Glu Asp Glu Asp Glu
 180 185 190
 Glu Met Pro Glu Asp Thr Glu Asp Leu Asp His Tyr Glu Met Lys Glu
 195 200 205
 Glu Glu Pro Ala Glu Gly Lys Lys Ser Glu Asp Asp Gly Ile Gly Lys
 210 215 220
 Glu Asn Leu Ala Ile Leu Glu Lys Ile Lys Lys Asn Gln Arg Gln Asp
 225 230 235 240

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Tyr Leu Asn Gly Ala Val Ser Gly Ser Val Gln Ala Thr Asp Arg Leu
 245 250 255
 Met Lys Glu Leu Arg Asp Ile Tyr Arg Ser Gln Ser Phe Lys Gly Gly
 260 265 270
 Asn Tyr Ala Val Glu Leu Val Asn Asp Ser Leu Tyr Asp Trp Asn Val
 275 280 285
 Lys Leu Leu Lys Val Asp Gln Asp Ser Ala Leu His Asn Asp Leu Gln
 290 295 300
 Ile Leu Lys Glu Lys Glu Gly Ala Asp Phe Ile Leu Leu Asn Phe Ser
 305 310 315 320
 Phe Lys Asp Asn Phe Pro Phe Asp Pro Pro Phe Val Arg Val Val Ser
 325 330 335
 Pro Val Leu Ser Gly Gly Tyr Val Leu Gly Gly Gly Ala Ile Cys Met
 340 345 350
 Glu Leu Leu Thr Lys Gln Gly Trp Ser Ser Ala Tyr Ser Ile Glu Ser
 355 360 365
 Val Ile Met Gln Ile Ser Ala Thr Leu Val Lys Gly Lys Ala Arg Val
 370 375 380
 Gln Phe Gly Ala Asn Lys Ser Gln Tyr Ser Leu Thr Arg Ala Gln Gln
 385 390 395 400
 Ser Tyr Lys Ser Leu Val Gln Ile His Glu Lys Asn Gly Trp Tyr Thr
 405 410 415
 Pro Pro Lys Glu Asp Gly
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<210> 3

<211> 471

<212> PRT

<213> Caenorhabditis elegans

<400> 3

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 20 25 30
 Asp Glu Leu Ser Met Lys Phe Ile Asn Ala Glu Asn Lys Gly Ile Ile
 35 40 45
 Val Thr Ala Asn Ile Gln Glu Asn Tyr Pro Arg Gln Pro Pro Ile Trp
 50 55 60
 Phe Ser Glu Ser Asp Asp Val Pro Val Ile Gly Met Ser Leu Gln Arg
 65 70 75 80

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Leu	Thr	Glu	Thr	Glu	Glu	Ser	Thr	Asn	Ile	Leu	His	Gln	Val	His	Arg	85	90	95	
Leu	Val	Ser	Asp	Leu	Cys	Ser	Phe	Tyr	Asn	Leu	Gln	Met	Pro	Cys	Glu	100	105	110	
Leu	Pro	Gln	Ile	Ala	Pro	Pro	Val	Arg	Asp	Asp	Ile	Asp	Glu	Gly	Arg	115	120	125	
Gly	Ser	Asp	Ile	Ser	Asp	Thr	Thr	Ser	Glu	Pro	Ile	Asp	Asp	Asp	Met	130	135	140	
Ala	Gly	Asp	Gly	Glu	Val	Asp	Asp	Asp	Asp	Glu	Glu	Glu	Glu	Asp	Asp	145	150	155	160
Glu	Asp	Ala	Asp	Gly	Asp	Ile	Glu	Ile	Val	Glu	Met	Ala	Glu	Glu	Asp	165	170	175	
Pro	Thr	Ser	Gln	His	Asp	Val	Gly	Val	Ser	Lys	Glu	Gly	Leu	Asp	Met	180	185	190	
Leu	Asp	Lys	Val	Ser	Lys	Ile	Asn	Arg	Gln	Gln	His	Leu	Asp	Gly	Lys	195	200	205	
Val	Gln	Gly	Ser	Ile	Thr	Ala	Thr	Asp	Arg	Leu	Met	Lys	Glu	Ile	Arg	210	215	220	
Asp	Ile	His	Arg	Ser	Glu	His	Phe	Lys	Asn	Gly	Ile	Tyr	Thr	Phe	Glu	225	230	235	240
Leu	Glu	Lys	Glu	Glu	Asn	Leu	Tyr	Gln	Trp	Trp	Ile	Lys	Leu	His	Lys	245	250	255	
Val	Asp	Glu	Asp	Ser	Pro	Leu	Phe	Glu	Asp	Met	Lys	Lys	Leu	Lys	Lys	260	265	270	
Asp	His	Asn	Gln	Asp	His	Leu	Leu	Phe	Ser	Phe	Thr	Phe	Asn	Glu	Lys	275	280	285	
Phe	Pro	Cys	Asp	Pro	Pro	Phe	Val	Arg	Val	Val	Ala	Pro	His	Ile	Asn	290	295	300	
Gln	Gly	Phe	Val	Leu	Gly	Gly	Gly	Ala	Ile	Cys	Met	Glu	Leu	Leu	Thr	305	310	315	320
Lys	Gln	Gly	Trp	Ser	Ser	Ala	Tyr	Ser	Ile	Glu	Ser	Cys	Ile	Leu	Gln	325	330	335	
Ile	Ala	Ala	Thr	Leu	Val	Lys	Gly	Arg	Ala	Arg	Ile	Ser	Phe	Asp	Ala	340	345	350	
Lys	His	Thr	Ser	Thr	Tyr	Ser	Met	Ala	Arg	Ala	Gln	Gln	Ser	Phe	Lys	355	360	365	
Ser	Leu	Gln	Gln	Ile	His	Ala	Lys	Ser	Gly	Cys	Thr	Phe	Leu	Cys	Ser	370	375	380	

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Thr Pro Ser Ser His Phe Phe Ala Leu His Leu Val Phe Phe Leu His
 385 390 395 400

Ser Asp Asp Phe Phe Phe Asn Gly Phe Leu Lys Ser Glu Thr Phe Thr
 405 410 415

Phe Phe Lys Leu Ser Phe Arg Gly Tyr Ile Ser Ser Leu Val Leu Tyr
 420 425 430

Ser Phe Ser Arg His Leu His His Pro Phe Phe Thr Arg Phe Leu Ile
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Pro Gln Leu Gln Pro Pro Pro Ile Pro Phe Gln Leu Ile Pro Pro Phe
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Leu Asn Arg Thr Lys His Val
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<210> 4
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 <213> *Drosophila melanogaster*

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Asp Glu Leu Leu Cys Arg Phe Ile Asp Lys Asn Gly Lys Arg Tyr Asp
 35 40 45

Ile His Ala Asn Ile Thr Glu Thr Tyr Pro Ser Ser Pro Pro Val Trp
 50 55 60

Phe Ala Glu Ser Glu Glu Thr Ser Val Thr Asn Ala Val Gln Ile Leu
 65 70 75 80

Ser Asn Thr Asn Gly Arg Asp Asn His Val Ile Asn Gln Val Gly Ile
 85 90 95

Leu Leu Arg Glu Leu Cys Arg Leu His Asn Val Pro Leu Pro Pro Asp
 100 105 110

Ile Asp Asn Leu Ala Leu Pro Leu Gln Thr Pro Pro Pro Ser Ala Ser
 115 120 125

Pro Leu Arg Cys Glu Gln Arg Pro Gly Gly Gly Gly Ala Gly Gly Gly
 130 135 140

Gly Gly Pro His Gly Asn Glu Glu Thr Asp Ser Asp Gln Glu Glu Ile
 145 150 155 160

Glu Asp Pro Ile Gly Glu Ser Glu Gln Glu Ser Glu Gly Asp Glu Asp
 165 170 175

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 180 185 190
 Met Glu Val Glu His Leu Ala Thr Leu Glu Lys Leu Arg Gln Ser Gln
 195 200 205
 Arg Gln Asp Tyr Leu Lys Gly Ser Val Ser Gly Ser Val Gln Ala Thr
 210 215 220
 Asp Arg Leu Met Lys Glu Leu Arg Asp Ile Tyr Arg Ser Asp Ala Phe
 225 230 235 240
 Lys Lys Asn Met Tyr Ser Ile Glu Leu Val Asn Glu Ser Ile Tyr Glu
 245 250 255
 Trp Asn Ile Arg Leu Lys Ser Val Asp Pro Asp Ser Pro Leu His Ser
 260 265 270
 Asp Leu Gln Met Leu Lys Glu Lys Glu Gly Lys Asp Ser Ile Leu Leu
 275 280 285
 Asn Ile Leu Phe Lys Glu Thr Tyr Pro Phe Glu Pro Pro Phe Val Arg
 290 295 300
 Val Val His Pro Ile Ile Ser Gly Gly Tyr Val Leu Ile Gly Gly Ala
 305 310 315 320
 Ile Cys Met Glu Leu Leu Thr Lys Gln Gly Trp Ser Ser Ala Tyr Thr
 325 330 335
 Val Glu Ala Val Ile Met Gln Ile Ala Ala Thr Leu Val Lys Gly Lys
 340 345 350
 Ala Arg Ile Gln Phe Gly Ala Thr Lys Ala Leu Thr Gln Gly Gln Tyr
 355 360 365
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<211> 207

<212> PRT

<213> Mus musculus

<400> 5

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 Glu Glu Gln Glu Glu Arg Lys Pro Ser Ala Thr Gln Gln Lys Lys Asn
 35 40 45

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Thr Lys Leu Ser Ser Lys Thr Thr Ala Lys Leu Ser Thr Ser Ala Lys
50 55 60

Arg Ile Gln Lys Glu Leu Ala Glu Ile Thr Leu Asp Pro Pro Pro Asn
65 70 75 80

Cys Ser Ala Gly Pro Lys Gly Asp Asn Ile Tyr Glu Trp Arg Ser Thr
85 90 95

Ile Leu Gly Pro Pro Gly Ser Val Tyr Glu Gly Gly Val Phe Phe Leu
100 105 110

Asp Ile Thr Phe Ser Ser Asp Tyr Pro Phe Lys Pro Pro Lys Val Thr
115 120 125

Phe Arg Thr Arg Ile Tyr His Cys Asn Ile Asn Ser Gln Gly Val Ile
130 135 140

Cys Leu Asp Ile Leu Lys Asp Asn Trp Ser Pro Ala Leu Thr Ile Ser
145 150 155 160

Lys Val Leu Leu Ser Ile Cys Ser Leu Leu Thr Asp Cys Asn Pro Ala
165 170 175

Asp Pro Leu Val Gly Ser Ile Ala Thr Gln Tyr Leu Thr Asn Arg Ala
180 185 190

Glu His Asp Arg Ile Ala Arg Gln Trp Thr Lys Arg Tyr Ala Thr
195 200 205

<210> 6

<211> 200

<212> PRT

<213> Homo sapiens

<400> 6

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20 25 30

Asp Glu Asn Phe Thr Glu Leu Arg Gly Glu Ile Ala Gly Pro Pro Asp
35 40 45

Thr Pro Tyr Glu Gly Gly Arg Tyr Gln Leu Glu Ile Lys Ile Pro Glu
50 55 60

Thr Tyr Pro Phe Asn Pro Pro Lys Val Arg Phe Ile Thr Lys Ile Trp
65 70 75 80

His Pro Asn Ile Ser Ser Val Thr Gly Ala Ile Cys Leu Asp Ile Leu
85 90 95

Lys Asp Gln Trp Ala Ala Ala Met Thr Leu Arg Thr Val Leu Leu Ser
100 105 110

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Leu Gln Ala Leu Leu Ala Ala Ala Glu Pro Asp Asp Pro Gln Asp Ala
 115 120 125
 Val Val Ala Asn Gln Tyr Lys Gln Asn Pro Glu Met Phe Lys Gln Thr
 130 135 140
 Ala Arg Leu Trp Ala His Val Tyr Ala Gly Ala Pro Val Ser Ser Pro
 145 150 155 160
 Glu Tyr Thr Lys Lys Ile Glu Asn Leu Cys Ala Met Gly Phe Asp Arg
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 Asn Ala Val Ile Val Ala Leu Ser Ser Lys Ser Trp Asp Val Glu Thr
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 Ala Thr Glu Leu Leu Leu Ser Asn
 195 200

<210> 7
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 <212> PRT
 <213> *Drosophila melanogaster*

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 Asn Asp Ser Trp Thr Glu Leu Arg Gly Glu Ile Ala Gly Pro Pro Asp
 35 40 45
 Thr Pro Tyr Glu Gly Gly Lys Phe Val Leu Glu Ile Lys Val Pro Glu
 50 55 60
 Thr Tyr Pro Phe Asn Pro Pro Lys Val Arg Phe Ile Thr Arg Ile Trp
 65 70 75 80
 His Pro Asn Ile Ser Ser Val Thr Gly Ala Ile Cys Leu Asp Ile Leu
 85 90 95
 Lys Asp Asn Trp Ala Ala Ala Met Thr Leu Arg Thr Val Leu Leu Ser
 100 105 110
 Leu Gln Ala Leu Leu Ala Ala Ala Glu Pro Asp Asp Pro Gln Asp Ala
 115 120 125
 Val Val Ala Tyr Gln Phe Lys Asp Lys Tyr Asp Leu Phe Leu Leu Thr
 130 135 140
 Ala Lys His Trp Thr Asn Ala Tyr Ala Gly Gly Pro His Thr Phe Pro
 145 150 155 160
 Asp Cys Asp Ser Lys Ile Gln Arg Leu Arg Asp Met Gly Ile Asp Glu
 165 170 175

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Ala Thr Glu Gly Leu Phe Ser
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<210> 8

<211> 295

<212> PRT

<213> *Saccharomyces cerevisiae*

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Leu Glu Asp Asp Ser Asn Ile Phe Thr Trp Asn Ile Gly Val Met Val
 35 40 45

Leu Asn Glu Asp Ser Ile Tyr His Gly Gly Phe Phe Lys Ala Gln Met
 50 55 60

Arg Phe Pro Glu Asp Phe Pro Phe Ser Pro Pro Gln Phe Arg Phe Thr
 65 70 75 80

Pro Ala Ile Tyr His Pro Asn Val Tyr Arg Asp Gly Arg Leu Cys Ile
 85 90 95

Ser Ile Leu His Gln Ser Gly Asp Pro Met Thr Asp Glu Pro Asp Ala
 100 105 110

Glu Thr Trp Ser Pro Val Gln Thr Val Glu Ser Val Leu Ile Ser Ile
 115 120 125

Val Ser Leu Leu Glu Asp Pro Asn Ile Asn Ser Pro Ala Asn Val Asp
 130 135 140

Ala Ala Val Asp Tyr Arg Lys Asn Pro Glu Gln Tyr Lys Gln Arg Val
 145 150 155 160

Lys Met Glu Val Glu Arg Ser Lys Gln Asp Ile Pro Lys Gly Phe Ile
 165 170 175

Met Pro Thr Ser Glu Ser Ala Tyr Ile Ser Gln Ser Lys Leu Asp Glu
 180 185 190

Pro Glu Ser Asn Lys Asp Met Ala Asp Asn Phe Trp Tyr Asp Ser Asp
 195 200 205

Leu Asp Asp Asp Glu Asn Gly Ser Val Ile Leu Gln Asp Asp Asp Tyr
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Asp Asp Gly Asn Asn His Ile Pro Phe Glu Asp Asp Asp Val Tyr Asn
 225 230 235 240

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<210> 9
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<213> Artificial Sequence
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<223> Description of Artificial Sequence: Primer

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<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

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<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 12
atgcagtcga actcgtgaat gacagtctgt 30

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<212> DNA
<213> Artificial Sequence

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<223> Description of Artificial Sequence: Primer

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<212> DNA
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<212> PRT
<213> Homo sapiens

10005549-102994

<400> 17

Pro His Leu Pro Pro Arg Gly Ser Val Pro Gly Asp Pro Val Arg Ile
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 His Cys Asn Ile Thr Glu Ser Tyr Pro Ala Val Pro Pro Ile Trp Ser
 20 25 30
 Val Glu Ser Asp Asp Pro Asn Leu Ala Ala Val Leu Glu Arg Leu Val
 35 40 45
 Asp Ile Lys Lys Gly Asn Thr Leu Leu Leu Gln His Leu Lys Arg Ile
 50 55 60
 Ile Ser Asp Leu Cys Lys Leu Tyr Asn Leu Pro Gln His Pro Asp Val
 65 70 75 80
 Glu Met Leu Asp Gln Pro Leu Pro Ala Glu Gln Cys Thr Gln Glu Asp
 85 90 95
 Val Ser Ser Glu Asp Glu Asp Glu Glu Met Pro Glu Asp Thr Glu Asp
 100 105 110
 Leu Asp His Tyr Glu Met Lys Glu Glu Glu Pro Ala Glu Gly Lys Lys
 115 120 125
 Ser Glu Asp Asp Gly Ile Gly Lys Glu Asn Leu Ala Ile Leu Glu Lys
 130 135 140
 Ile Lys Lys Asn Gln Arg Gln Asp Tyr Leu Asn Gly Ala Val Ser Gly
 145 150 155 160
 Ser Val Gln Ala Thr Asp Arg Leu Met Lys Glu Leu Arg Asp Ile Tyr
 165 170 175
 Arg Ser Gln Ser Phe Lys Gly Gly Asn Tyr Ala Val Glu Leu Val Asn
 180 185 190
 Asp Ser Leu Tyr Asp Trp Asn Val Lys Leu Leu Lys Val Asp Gln Asp
 195 200 205
 Ser Ala Leu His Asn Asp Leu Gln Ile Leu Lys Glu Lys Glu Gly Ala
 210 215 220
 Asp Phe Ile Leu Leu Asn Phe Ser Phe Lys Asp Asn Phe Pro Phe Asp
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 Pro Pro Phe Val Arg
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<210> 18

<211> 13

<212> PRT

<213> Homo sapiens

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<210> 19
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<210> 20
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<400> 20
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 1 5 10

<210> 21
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<210> 22
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<400> 22
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<210> 23
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<400> 23
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<210> 24
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<400> 24

Gln Glu Asp Val Ser Ser Glu Asp Glu Asp Glu Glu Met Pro
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<210> 25

<211> 14

<212> PRT

<213> Homo sapiens

<400> 25

Ala Glu Gly Lys Lys Ser Glu Asp Asp Gly Ile Gly Lys Glu
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<210> 26

<211> 14

<212> PRT

<213> Homo sapiens

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Glu Leu Val Asn Asp Ser Leu Tyr Asp Trp Asn Val Lys Leu
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<210> 27

<211> 14

<212> PRT

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Ile Leu Leu Asn Phe Ser Phe Lys Asp Asn Phe Pro Phe Asp
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Val Arg Ile His Cys Asn Ile Thr Glu Ser Tyr Pro Ala Val
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<211> 14

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<213> Homo sapiens

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Ala Val Glu Leu Val Asn Asp Ser Leu Tyr Asp Trp Asn Val
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<212> PRT
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<400> 31
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<210> 32
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<400> 32
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<210> 33
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<400> 33
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<400> 34
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<210> 35
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<400> 35
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<210> 36
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<400> 36
 Ala Pro Gly Ala Gly Gly Gly Pro Gly Gly Gly Pro Gly Pro Gly Pro
 1 5 10 15

<210> 37
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 <212> PRT
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<400> 37
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<210> 38
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<400> 38
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<210> 39
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 1 5 10 15

<210> 40
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 1 5 10 15

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<400> 41
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<210> 42
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<400> 42
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<210> 43
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<400> 43
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<210> 46
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<400> 46
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<210> 47
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Tyr Arg Ser Gln Ser Phe Lys Gly Gly Asn Tyr Ala Val Glu Leu Val
 20 25 30

Asn Asp Ser Leu Tyr Asp Trp Asn Val Lys Leu Leu Lys Val Asp Gln
 35 40 45

Asp Ser Ala Leu His Asn Asp Leu Gln Ile Leu Lys Glu Lys Glu Gly
 50 55 60

Ala Asp Phe Ile Leu Leu Asn Phe Ser Phe Lys Asp Asn Phe Pro Phe
 65 70 75 80

Asp Pro Pro Phe Val Arg Val Val Ser Pro Val Leu Ser Gly Gly Tyr
 85 90 95

Val Leu Gly Gly Gly Ala Ile Cys Met Glu Leu Leu Thr Lys Gln Gly
 100 105 110

Trp Ser Ser Ala Tyr Ser Ile Glu Ser Val Ile Met Gln Ile Ser Ala
 115 120 125

Thr Leu Val Lys Gly Lys Ala Arg Val Gln Phe Gly Ala Asn Lys Ser
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Gln Tyr Ser Leu Thr Arg Ala Gln Gln Ser Tyr Lys Ser Leu Val Gln
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Ile His Glu Lys

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<213> Artificial Sequence

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<400> 48

aggatcatct ccgacctgtg

20

<210> 49

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 49

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20

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<210> 50
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<400> 51
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<400> 52
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<400> 54
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<210> 55
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